CLAIMS

1. Method for establishing an operating point for a preselected powertrain operating parameter for a powertrain including an engine and a transmission, comprising:

providing a set of preferred operating points for said preselected powertrain operating parameter, said set of preferred operating points being mapped to at least one additional powertrain operating parameter;

providing a desired operating point for said at least one additional powertrain operating parameter and referencing said set of preferred operating points with said desired operating point; and,

establishing the operating point for said preselected powertrain operating parameter in accordance with referenced preferred operating points from said set of preferred operating points.

2. The method for establishing an operating point for a preselected powertrain operating parameter as claimed in claim 1 wherein said preselected powertrain parameter comprises transmission input speed and said at least one additional powertrain operating parameter is selected from the group consisting of transmission output speed and transmission output torque and combinations thereof.

3. The method for establishing an operating point for a preselected powertrain operating parameter as claimed in claim 1 wherein said set of preferred operating points for said preselected powertrain operating parameter correspond to minimum aggregate powertrain losses.

4. The method for establishing an operating point for a preselected powertrain operating parameter as claimed in claim 1wherein said transmission further includes a motor and a battery and said set of preferred operating points correspond to unconstrained powertrain operation with respect to battery power.

5. The method for establishing an operating point for a preselected powertrain operating parameter as claimed in claim 3 wherein said transmission further includes a motor and a battery and said set of preferred operating points correspond to unconstrained powertrain operation with respect to battery power.

6. The method for establishing an operating point for a preselected powertrain operating parameter as claimed in claim 1 wherein said transmission further includes a motor and a battery and said set of preferred operating points correspond to constrained powertrain operation with respect to battery power.

7. The method for establishing an operating point for a preselected powertrain operating parameter as claimed in claim 3 wherein said transmission further includes a motor and a battery and said set of preferred operating points correspond to constrained powertrain operation with respect to battery power.

8. Method for establishing an operating point for a first powertrain operating parameter for a powertrain including an engine and a transmission, comprising:

providing a first set of preferred operating points for said first powertrain operating parameter corresponding to unconstrained powertrain operation with respect to a second powertrain operating parameter, said first set of preferred operating points being mapped to at least one additional powertrain operating parameter;

providing a second set of preferred operating points for said first powertrain operating parameter corresponding to constrained powertrain operation with respect to the second powertrain operating parameter, said second set of preferred operating points being mapped to said at least one additional powertrain operating parameter;

providing a desired operating point for said at least one additional powertrain operating parameter and referencing said first and second sets of preferred operating points with said desired operating point; and,

establishing the operating point for said first powertrain operating parameter in accordance with referenced preferred operating points from said first and second sets of preferred operating points.

9. The method for establishing an operating point for a first powertrain operating parameter as claimed in claim 8 wherein said first powertrain parameter comprises transmission input speed and said at least one additional powertrain operating parameter is selected from the group consisting of transmission output speed and transmission output torque and combinations thereof

10. The method for establishing an operating point for a first powertrain operating parameter as claimed in claim 8 wherein said transmission further includes a motor and a battery and said second powertrain operating parameter is battery power.

11. The method for establishing an operating point for a first powertrain operating parameter as claimed in claim 9 wherein said transmission further includes a motor and a battery and said second powertrain operating parameter is battery power.

12. The method for establishing an operating point for a first powertrain operating parameter as claimed in claim 8 wherein said first and second sets of preferred operating points for said preselected powertrain operating parameter correspond to minimum aggregate powertrain losses for respective constrained and unconstrained powertrain operation with respect to the second powertrain operating parameter.

13. The method for establishing an operating point for a first powertrain operating parameter as claimed in claim 9 wherein said first and second sets of preferred operating points for said preselected powertrain operating parameter correspond to minimum aggregate powertrain losses for respective constrained and unconstrained powertrain operation with respect to the second powertrain operating parameter.

14. The method for establishing an operating point for a first powertrain operating parameter as claimed in claim 11 wherein said first and second sets of preferred operating points for said preselected powertrain operating parameter correspond to minimum aggregate powertrain losses for respective constrained and unconstrained powertrain operation with respect to the second powertrain operating parameter.

15. Method for establishing an input operating point for use in control of a hybrid powertrain system including a hybrid transmission having an input coupled to an engine, an output, an electric motor and an electric battery, comprising:

defining an operating space for the powertrain in transmission input speed (Ni), transmission input torque (Ti), transmission output speed (No), and transmission output torque (To);

determining aggregate powertrain system power losses throughout said operating space;

determining first and second operating regions in Ni, No, To corresponding to minimum aggregate system power losses , said first operating region corresponding to system operation without battery power constraints and said second operating region corresponding to system operation with zero battery power, wherein Ni within said first and second operating regions represents preferred input operating points;

providing a desired operating point in No and To, and referencing said first and second operating regions therewith to obtain respective preferred input operating points in Ni; and, establishing the input operating point in accordance with said respective operating points in Ni.